Lasers for Satellite Laser Ranging (SLR) Applications

Joyce Kilmer, PhD, Photonics Industries, Bohemia NY

Photonics Industries' RGL Series of picosecond (ps) laser are well suited for the Next Generation Satellite Laser Ranging System (NGSLR). The RGL 532-2.5 LP has been successfully used by NASA as described in: "An Overview of Satellite Laser Ranging (SLR)" by Jan McGarry NASA / GSFC / 694, June 2012. Finally, the NGSLR optical bench design using the Photonics Industries' RGL 532-2.5 LP is described.

Photonics Industries' RGL Series of picosecond (ps) laser are well suited for the Next Generation Satellite Laser Ranging System (NGSLR):

- Laser requirements:
 - Subnanosecond pulse width
 - Asynchronous PRF 2 kHz
 - Software controllable

Specifically, Photonics Industries' RGL 532-2.5 LP has the following specifications:

- Wavelength 532nm
- Power level 5W @ 5kHz
- · Repetition rate Single Shot to 5kHz,
 - external trigger
- Pulse energy 2.5mJ/pulse @ 2kHz
- Pulse width 50ps (Nominal)
- Pulse to Pulse Stability < 2% rms
- Spatial mode profile TEM00, M2 < 1.3

The RGL 532-2.5 LP has been successfully used by NASA as described in:

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"An Overview of Satellite Laser Ranging (SLR)"
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Jan McGarry NASA / GSFC / 694

June 2012

http://space-geodesy.nasa.gov/docs/2012/OverviewSLR_mcgarry_120606.pdf

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Photonics Industries

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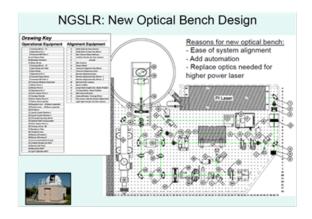
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RGL 532-2.5 LP

Wavelength: 532nm
Power level: 5W @ 5kHz

Repetition rate: Single Shot to 5kHz, external trigger

Pulse energy: 2.5mJ/pulse @ 2kHz
Pulse width: 50ps (Nominal)

Pulse to Pulse Stability: < 2% rms Spatial mode profile: TEM00, M2 < 1.3



